

## A NEW SPECIES OF PINE FROM MEXICO

EGON LARSEN

*Pinus martinezii* Larsen, sp. nov. Arbor modica vel magna mole, altitudine m 25 vel pluri, diametro cm ca 60 (supra terram metros 1.30). Maturis coma rotundata est et rarior; veterum ramos crassos, horizontales-gravidos, raro tamen satarum sine ordine vel singulos vel involutos usque ad terram productos invenies. Foliorum bases praecoce quodam et deciduo epidermati sunt tectae, quo ramuli asperrimi fiunt. Hae in veteribus ramis et in superiore stipite velut scabies permanent. Cortex, quae in recentissimis pruinosa et quasi viridis conspicitur, in veteribus ramulis in colorem brunneum sed non saturatum mutatur. In imo trunco necnon in veteribus ramis cortex crassa et aspera et altis in longitudinem positis fissuris penetrata, in quibus sane flava conspicitur. Cortex omnino mitis est et squamosa. Folia in fasciculis quinis, senis, septenis, interdum octenis, plerumque senis invenies, longitudine cm 20–28, plerumque 23, dura, recta, intus glauci colores qui postea in viridem obscurum mutatur, marginibus aciformis et serratis, dentibus parvis et frequentibus instructa; in omnibus faciebus stomata, quorum tres vel quattuor ordines in superficie superiore adsunt, in aliis sex vel septem. Hypodermatis crassitudo variata, quod dum saepe in chlorenchyma alte penetret, musquam tamen ad endoderma pervenit. Canales resiniferos tres et quidem medios habent. Exteriores endodermatis parietes crassissimi. Sunt fasces fibro-vasculares duo, conferti sed satis distincti. Vaginae recentium fasciculorum colore brunneo sunt, qui postea in cinereum mutatur, et longitudinem cm 1.2–2.5 habent. Gemmae conoides, colore brunneo non saturatae; non resiniferae. Strobili oblongi vel conoides, subsymmetricals, leniter incurvati et reflexi, coloris brunnei non saturati et in pedunculis longitudinis cm ca 1.2 positi, mensibus decembre et ianuario maturescunt, maturatique aperiuntur. Semidecidui sunt, nam etiam cum strobilus cecidit, pedunculi eius cum paucis squamis adhuc in ramo manent. Strobilorum squamae durae satis ac validae, longitudine cm ca 2.5 vel paulo maiores, latitudine cm ca 1.2 apice rotundato et aliquando inaequali instructae. Apophyse on forma est varia: nunc fere plana, nunc protuberans, aliquando denique reflexa. Umbones sublatis et colore quam reliqua apophysis nigriore distincti aculeo deciduo et invalido armati sunt. Semina flava cinerascentia nigro maculata plerumque, sed quaedam colore aliquo modo rubro aequaliter tecta sunt. Pleraque conspicuis in longitudinem factis canalibus notata sunt. Seminum fere 48000 pro kg. Alae seminum sine hamo basali, qui totam seminis peripheriam amplectitur, longae cm 1.2–1.9 sunt.

Type: Approximately 4 mi S of Paracho between km markers 45 and 48 on road from Carapan to Uruapan, Michcacan, Mexico, Lat 19° 17' N, Long 102° 04' W, altitude 7800 ft, *H. V. Hinds & E. Larsen 65*, Jan. 10, 1960 (herbarium of the Forestry and Timber Bureau, Canberra, no. *A.F.S. 13084/A*—holotype; CANB, no. *133708*; Forest Research Institute, Rotorua, New Zealand, no. *F.R.I. 60/1277*; MEXU; UC).

This species is named in honor of Professor Maximino Martinez of the University of Mexico, world famous authority on Mexican conifers. It was collected for the New Zealand Forest Service during a visit to Mexico during 1959–1960 while I was in the employ of the Forest Research Institute, Rotorua.

In general appearance *P. martinezii* resembles *P. douglasiana* Mart. from which it differs in having its needles predominantly in fascicles of six, by having hypoderm which never extends to the endoderm, by its cone-peduncle which, with a few scales, remains on the branch when the cone falls, and by the rough bark on young trees and upper part of the stem.

In addition to *P. douglasiana* it resembles *P. michoacana* Mart. var. *quevedoi* Mart. in several respects, the six needle fascicles in particular, but differs in having much shorter cones and needles, by the glaucous inner surface of the needles, and by having only three resin canals; also the buds are not resinous. From *P. durangensis* Mart. which is the only other species with six needles per fascicle it differs in having glaucous needles 8–11 in. long, while those of *P. durangensis* are non-glaucous and only 4–9 in. *Pinus durangensis* has short but strong and persistent cone scale prickles, while those of *P. martinezii* are very small, weak, and deciduous.

In the Uruapan area the species grows in association with *P. montezumae* Lamb., *P. teocote*, C. & S., *P. leiophylla* Benth, *P. pseudostrobus* Lindl., and *Quercus* species. It generally occupies the drier ridges where it equals *P. montezumae* in growth, while *P. pseudostrobus* is found mainly on the slightly better sites. It is easily distinguished from these species by its stiff, erect, dark green to glaucous needles.

The site is rather poor, forming the higher part of a large undulating plateau. The soil is loose, coarse volcanic ash containing many particles and large outcrops of vesicular lava. The forest is mostly second growth of varying ages, semi-open with a dense cover of grass and tussock in many places. It is 2800 ft higher than Uruapan where the mean annual rainfall is 65 in and the mean annual temperature 67°F with the means for the coldest and warmest months 61°F and 72°F respectively.

The trees are generally of good form and branches, while heavy on open-grown trees, respond well to close spacing to give long, clean boles. The rate of height growth is approximately 2 ft per year.

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